

Architectural and Historical Impact Assessment of two unidentified concrete bunkers on the Kynoch Explosives Factory site, Umbogintwini



http://www.bidorbuy.co.za/item/32786334/RARE_2nd_World_War_Royal_Navy_Sheet_Brass_Badge_and_Brass_RNAD_title.html

Prepared for: Huntsman Pigments
Tioxide Southern Africa (Pty) Ltd
Private Bag X504
Umbogintwini
4120
June 2011



archaic consulting

architecture: research: conservation: anthropology: impacts consulting

debbie whelan
po box 21834
mayors walk
3208

tel: 033 3442522
fax: 033 3443122
cell: 083236 0410
email: debbie@archaic.co.za

**Architectural and Historical Impact Assessment of two unidentified
concrete bunkers on the Kynoch Explosives Factory site, Umbogintwini**

Contents of Report

1.	Introduction	3
2.	Methodology	3
3.	History of site	4
4.	History of other bunkers on site	5
5.	Assessment of structures	6
	5.1 Northern bunker	6
	5.2 Southern bunker	8
6.	Recommendations and mitigation	9
7.	References	10

1. Introduction

Debbie Whelan of Archaic Consulting was contacted by Mr. Robin Archer from Huntsman Tioxide regarding the proposed demolition of two concrete partially subterranean bunkers on the old Kynoch Explosives factory site at Umbogintwini. These two bunkers dated from the Second World War. They are mostly buried with a convex reinforced concrete roof structure which is currently covered with corrugated sheeting. It is possible that these would have been invisible from the air and could have functioned as air raid shelters. Their exact role is not at this point known, although others on the site are known to have stored ammunition that was subsequently deployed at the Front, and they have certain diagnostic features to suggest this. Together, they form part of a suite of wartime structures, associated with defence and attack. In this report, they shall be referred to simply as 'bunkers' to differentiate them from the ammunition bunkers which have different features.

This report is prepared at a time when all the Natal Coastal Defences are being assessed and itemized, and relies in some part for resolution of the unanswered questions to be points of departure for this historical study.

2. Methodology

Debbie Whelan visited the site together with Mr. Archer on 3 June 2011. The actual bunkers lie in a hollow which is lined with indigenous bush to the east, and factory development to the west. They are situated in an open field of wild sugar cane and scrub, which had been recently cut at the time of the visit. Both bunkers were inspected, as well as some other structures on the site which had been constructed in the 1960s, according to Mr. Archer.



Fig 1: Showing site of bunkers relative to main factory complex.

At the outset, Archaic Consulting was made to understand that these were ammunition bunkers. However, when previous reports on specific and similar issues were used as reference and context, it was discovered that this may not have been so. Dr Graham Dominy's report (1995) on the 'ammunition bunkers' was used as a primary reference. This document discussed much larger mono-pitch roofed structures which had windows, and a different architectural language to the two bunkers in question (see Fig 2). Despite consultation, no further information on the relationship between the two types was found. A list of military specialists who were contacted for assistance in identification is found at the end of this report.

In addition to Dr Dominy's report, Brian Alborough's monograph dealing with the military defences in this area in World War II was also used (ca 1997). A third report compiled by Rocco Bosman on Modderfontein Village (2010) fleshed out the national context. Note that the latter contains detailed descriptions of the relationship between Modderfontein and the Kynoch factory in Umbogintwini, and any interested party should revert to this for elucidation. The intention of this report is to focus as much as possible on the buildings at hand.

These primary sources were supplemented by an internet search, a scrutiny of the documents available in the Pietermaritzburg Archives Repository (Note that Dr Dominy scrutinized documents in the National Archives Repository as part of his 1995 Report) as well as other published works on Kynoch, AECI and the Royal Navy Armaments Depots.

3. History of site

The development of explosive manufacture on this site commenced in 1909, when George Kynoch, of the well-known Birmingham firm and opposition to Alfred Nobel, was granted a site at the edge of the Umlazi Native Location. The focus of explosives manufacture at this time was the mining operations on the Witwatersrand, and the intention of this new Kynoch factory was to feed into this operation. Many of the original staff members were imported from Arklow, and some continued to work at the factory for a number of generations. Relations between the Kynoch Company and South Africa had been in existence for a number of years.

The acreage awarded to Kynoch was expropriated from a section of the Umlazi Location, thus the Natal Native Trust played a pivotal role in negotiations. The power of the industry in prompting the Government to requisition such land was thus massive. In return, still open Crown Lands along the Umkomaas were transferred to Natal Native Trust. The people living on these lands were few, but those kraals that were there were moved and compensated.

Initially there were a number of accidents. In 1910 an archival source notes of an explosion at the new factory (CSO 1883 1910/30). This was eventually published in the Natal Government Gazette in January 1910. Then, in 1913, an official investigation by the Union Government found that, 'One European and one native were killed by the explosion. The explosive, in course of manufacture consisted of nitroglycerin (82.4 per cent.), nitrocotton (5.6), sodium nitrate (8), and potassium nitrate (4 per cent.). There were 1000 lb. of explosive in the building, and, of this, probably 750 lb. were in the porch, and 250 lb. in a McRoberts' kneading machine. At the site of the kneading machine a crater 15ft. in diameter and 3ft. deep, was formed, while at the site of the porch the crater was 22 f t. in diameter and 6 ft. 6 in. deep. The first explosion probably occurred in the porch from a blow on a thin film of the explosive caused either by dropping a full box, or setting a box down roughly after emptying it, or by a blow on the edge of the pan whilst emptying a box, or by the sudden breaking of a pulley and the broken portion striking the explosive. --G. W. McD¹. The Umbogintwini factory ceased to produce munitions, and concentrated on the production of chemicals and fertilizer. Even during the war, their task was the production of super-phosphates which were in high demand (Cartwright 212)

Labour was an issue. Initially much of the workforce was Irish, imported from abroad. Position at the edge of the Location may have been strategic, although the author has not found any direct reference to this. Certainly, following the recommendations of Colonel Friend Addison, who was proposing internships for young African boys, Mr Udal, the manager of the Kynoch factory aggressively pursued this avenue, where young boys of 15 years old would enter into a five year apprenticeship with the factory, being housed and fed and paid. The salary would start at 12/- per month, culminating in 16/- per month at the end of the internship. It is well-known that this factory was eventually merged into the ICI Group in the 1920s.

¹ Accident which occurred in No. 47, a mixing or kneading house, at the, explosives works of Messrs. Kynoch, Ltd., Umbogintwini, Durban, Natal, on Aug. 21, 1913 - Report on an -----, Major A. B. Denne, Chief Inspector of Explosives, Union of South Africa. [U.G. 49-'13.] In: Journal of the Society of Chemical Industry No. 24, Vol. XXXII December 31, 1913 (www.freepyroinfo.com/Pyrotechnic/.../Explosion_Long_File.rtf)

4. History of other bunkers on site

Certainly, there is no evidence of any construction in this area on the 1937 aerials. All recorded evidence of wartime construction located thus far dates back to 1942.

Dr. Dominy records that the flotilla of now demolished mono-pitched ammunition bunkers which were located in the field to the west of the bunkers in question were constructed in 1942.² Their construction was as a result of increased operations in the Far East and the Indian Ocean (Dominy 1995:7). Whilst the officially sanctioned site at Ganspan was being constructed, intensified wartime operations meant that more shelters had to be constructed and at the end of 1942 the AE&CI Umbogintwini property was identified as a site for the Royal Navy Armaments Depot.

Dominy notes this sequestration as being 670 acres on AE& CI Land, which already had an existing sugar lease to Illovo Sugar. The Admiralty paid £1000 to AE&CI as compensation. The construction of these bunkers commenced, reaching completion in August of 1943 (Ibid:7). Dominy recorded that 'There were 104 structures in the Royal Naval Ammunition and Mine Depot in 1955' (Ibid:5). How many of this substantial number remain is unknown.



Fig 2: One of the two remaining ammunition bunkers on the Huntsman Tioxide site.

Most of these ammunition bunkers, save for two examples, were demolished to make way for the development of the Southgate Industrial Park development in 1995. The two remaining ammunition bunkers are located on the Huntsman site and are currently in reasonable condition and used for storage.

The two bunkers that form the focus of this study differ from the above examples, structurally, physically and architecturally. It is suspected that they form part of the suite of wartime developments but that rather belonging to the corpus of defensive structures of the RNAD, they were developments by AE&CI for their factory employees. Cartwright reinforces the fact that they possibly could have been bomb shelters, saying that 'The factories at Umbogintwini and Somerset West made heroic efforts to conceal their existence, but anyone who has ever tried to 'black out' factories that are working at full pressure will tell you that, in the words of one of the veterans who did his best in 1940, is like trying to make ice cream in hell' (Cartwright: 1964: 211).

² This statement is reinforced by a comment in Martin and Orpen (1979: 214).

5. Assessment of structures

The two bunkers under consideration are reinforced concrete structures. The bunker to the north is intact, though badly cracked, and the bunker to the south is roofless and has been for some time judging by the size of the fig trees that have made it their home. Both are sunk into the ground, providing a blast-wall. The one end is open and has a set of double steel doors. The convex concrete roof has extra support with a series of reinforced concrete brackets. The top of the roof is covered with a ribbed sheeting, most of which is obscured due to dense vegetation. The north bunker may have had a ventilation opening in the northern end, which has since been bricked in.

5.1 Northern bunker



Fig 3: Showing northern bunker from the south



Fig 4: Showing patching on the interior walls of the northern bunker



Fig 5: Interior of Northern bunker



Fig 6: Roofscape of Northern bunker

5.2 Southern Bunker

The concrete roof of this bunker is long collapsed. It is located some 500m to the south of the north bunker, and is similarly mostly subterranean. Little remains of the structure except for the walls, and in their current state could be considered a safety hazard. The internal space is highly vegetated. Fig trees are growing out of the walls



Fig 7: The southern bunker from the entrance to the south



Fig 8: The southern bunker from above



Fig 9: West wall of southern bunker showing steel reinforcing

6. Recommendations and mitigation

significance	Local value	Regional value	National value	International value
architectural	medium	low	low	low
Historical	high	low	low	low
Technical	high	low	low	low
Cultural	low	low	low	low
social	low	low	low	low

Whilst clear direction as to the proper naming and purpose of these structures is still outstanding, it is necessary to recommend a course of action with regards to their future.

Statement: It is suspected that these structures were constructed by the Kynoch/AE&CI factory as bomb shelters for their staff during the middle of the war. They do thus not form part of the suite of structures which were constructed by the RNAD during 1942-43.

- From all enquiry these bunkers are unique in their context and construction.
- They have not been positively identified by members of the armed forces or military enthusiasts as components of a well-known Durban Defence system.
- The reality and practicality of keeping coastal defenses such as this intact in an environment which is necessarily heavily policed due to its functioning as a chemical factory is problematic as far as public access is concerned.
- The southern bunker is virtually totally collapsed. The northern bunker has a recommendation for demolition due to its condition.

Whilst recommending the retention of the northern bunker in the new development is an option, its fate would be worse than the current situation. It would be central to a new, denser factory development, and be devoid of any context whatsoever. In addition, lack of maintenance over the last few decades has meant that this is not likely to be perceived as being in a viable state for reuse as part of a new complex. In addition, its low levels of ventilation mean that it has limited prospects for reuse other than serving as a storeroom. Demolition, thus, appears as a single, practical option.

It is thus recommended that an appropriate professional prepare measured drawings and photographs of the northern bunker, and that these form part of an interpreted display in the foyer of the current Huntsman Tioxide Administration building. Digitization means that this information can be distributed to the SANDF Archives, the Military History Society and the AE&CI Museum, meaning that they have more public access than they have ever had. Should these form part of the AE&CI defenses and not part of the RNAD, this information not only adds to the corporate history but also highlights a corporate pride in a unique history and forms part of corporate responsibility.

7. References

Alborough, B. (undated) Defending Durban. 1939-1945.
Self- Published monograph

Bosman, R. 2010. Modderfontein Village Development
Heritage Impact Assessment. Annexure 1: The History Report

Cartwright, AP. 1964. The Dynamite Company. The Story of African Explosives and Chemical Industries Limited. Cape Town. Purnell and Sons

Dominy, G. 1995. Report on the Historical Survey of the former World War II Ammunition bunkers, Proposed Southgate Industrial Park, Umbogintwini, KwaZulu-Natal Province.

Imperial Chemicals Ltd. ca 1945. Equipment of an industry,
Birmingham : Kynoch Press

Martin, H and Orpen, N (1979) South Africa at war : military and industrial organization and operations in connection with the conduct of the war, 1939-1945
Cape Town : Purnell

Van Helten, J. 1978 A bunch of Hamburger Shylocks: the case of the South African dynamite trade, 1881-1914. Self-published monograph

Darrel D Hall Collection: The Defense of Durban. Killie Campbell Collections

Archives:

PM 75 1909/10 Messrs Kynoch Limited. Umbogintwini, Natal. Correspondence re issue of a provisional licence

CSO 1098 1886/3878 State Secretary, Pretoria. Notifying that the government South African Republic had ordered from Kynoch and Company 250,000 cartridges and asking that difficulties might not be put in the way of transshipment to Delgoa Bay.

CSO 1155 1887/4111 State Secretary, Pretoria. States that permission has been granted to Kynoch and Company for the importation of certain goods, and requests that the same be allowed to be transmitted through natal.

CSO 1164 1887/5002 State Secretary, Pretoria. Permit to G Kynoch and Company of Pretoria to import into the South African Republic certain ammunition.

CSO 1867 1909/703 OJ Askew, Durban. Applies on behalf of Messrs. Kynoch Ltd for annual licenses. Forwards cheque for one hundred pounds (\$100-0-0).

CSO 1869 1909/2118 Manager Kynoch Ltd, Umbogintwini. Suggests that a representative from the explosives department be sent to attend meeting at Cape Town on the 19th instant, to discuss the regulations respecting the conveyance of explosives by rail.

CSO 1872 1909/2867 Kynoch Ltd, Umbogintwini, Durban. Restrictions on the issue of permits for explosives by the Inspector of Explosives.

CSO 1883 1910/30 Editor Natal Advertiser Durban. Requests a copy of the Report of the Inspector of Explosives on the Kynoch Explosion for publication.

CSO 1891 1908/6803 Secretary Prime Minister. Establishment of an explosives factory by Kynoch Ltd: question of regulation under Explosive Law no 23/97, etc.

SNA I/1/439 1909/2372 Manager, Kynoch Ltd, Umbogintwini asks whether he may send boys to recruit labour for work at the factory without fear of interference providing they have a travelling pass and a letter from Kynochs.

SNA I/1/449 3644/1909 Kynoch Limited, Umbogintwini: Apprenticing of native boys between the ages of 14 and 19 years to manufacturers in the colony.

SNA I/1/472 2949/1910 Liebermann, Bellstadt and Co, Durban: Re Club License applied for by Messrs. Kynoch, Ltd at Umbogintwini.

CNC 2 CNC33/1911 Native Affairs Department: Lease to Messrs. Kynoch, Limited, of a Store Site in the Umlazi Location.

CNC 8 CNC296/1911 Manager Kynoch Limited, Umbogintwini, Durban: Applies for a Native Beer Licence at Umbogintwini Compound.

CNC 11 CNC457/1911 Acting Secretary for Native Affairs, Pretoria: Indenturing of Native youths. Correspondence with Messrs. Kynoch, Limited, and Newspaper cutting Re Colonel Addington's Scheme.

SNA1053/1911 CNC 204 1915/450 Application to dam Umbogintwini River. Kynoch Ltd.

NHD II/1/123 HDE111/1908 Chief Electrical Engineer: Suggests that Messrs. Kynoch be offered their 350 KW Electrical Plant.

NHD II/1/144 HDE685/1910 Kynoch: apply for an option on a site between the Union Whaling Company and an Indian compound, if it should become available.

AGO I/8/143 86A/1913 Provincial Secretary Re- Lease between Kynoch Limited and Provincial Administration of Land for Headmaster's House, Umbogintwini School.

II 1/163 I2319/1908 Minute Paper from Protector of Indian Immigrants concerning Kynoch Limited who wish to employ Indians who have not paid their licence fees.

II 1/182 I435/1912 EG Pugh, Compound Manager, Kynoch Limited, Umbogintwini. encloses passes of Indians and return of birth form, for child to be registered.

II 1/185 I1613/1912 Acting Under Secretary for the Interior, Department of the Interior, Pretoria: Re Complaint by Kynoch firm that they are penalised by not being allowed to indenture Indians.

SGO III/1/239 SG826/1908 Chief Inspector Locations, Greytown: Locations. Removals. As to removal of natives from portion of Umlazi Location to be taken over by Messrs. Kynoch Ltd.

SGO _NO III/1/256 SGO1/1909 OJ Askew, Durban transfer of land at Durban to Kynoch's for the erection of a factory for manufacturing explosives.

CSO 1891 1910/2271 Colonial Secretary Natal: Suggested arrangements for control of manufacture of explosives at Messrs. Kynoch's factory at Umbogintwini.

CSO 1891 1910/3085 Deputy Governor Transvaal Pretoria: Arrangements for Chief Inspector of Explosives in the Transvaal to take over control of manufacture of explosives at Kynochs factory at Umbogintwini from 31 may 1910.

SNA I/1/397 1908/1166 Under Secretary for Native Affairs. Application by the government for a piece of land at Umbogintwini for the purposes of an explosives factory.

NT 159 T2853/1909 Secretary, Law Department, Natal. Re Kynoch's Ltd transfer from Natal Native Trust Land at Umbogintwini.

CSO 1881 1909/6899 Deputy Controller of Arms, Durban. Enquiry under explosives regulations in the recent explosion at Messrs. Kynoch's Ltd. Request for clerical assistance for some weeks.

CSO 1891 1908/6833 Principal Under Secretary: Respecting the inspection of explosives the manufacture of which by Messrs. Kynoch's is shortly to commence.

AG 45 AO 50/1909 OJ Askew, Durban, 23/12/1908 Messrs. Kynoch's Licence.

NT NO 176 F138/1911 Acting Secretary for Finance, Pretoria. Kynoch's Bond.

Documents in State Archives not consulted;

SAB: MNW 197 MM3036/13 Report By Chief Inspector of Explosives. Accident at Messrs Kynoch Limited. WJ Tremlett and 1 Native killed. Explosion

SAB: MNW 374 MM1335/17 Kynoch Limited :- Natal unrest amongst employees of :- in explosive works . request for assistance of Minister (if necessary) to settle the disturbance

SAB: MNW _NO 572 MM1665/21 Kynoch Limited. Report by CIE Re proposed closing down

SAB: CEN _NO 33 EE2030 Explosives And Industries (Kynoch) Umbogintwini.

SAB: HEN 2402 437/5/72 "Kynoch" Trade Mark Application by African Explosives and Industries Limited.

SAB: BIS 43 STA60 British SA. Explosives Co Ltd. Question of development of new industries at Kynoch Ltd factory Natal.

SAB: GG NO 582 9/51/35 War 1914 - 1915. Trade. Grant of permission to Messrs. Kynoch's, Ltd, Umbogintwini to export to England up to one hundred tons of gun cotton per week.

Internet Sources

Bosman, R (2010) <http://modderconserve.files.wordpress.com/2010/05/modderfontein-hia.pdf>

Internet Sources: www.freepyroinfo.com/Pyrotechnic/.../Explosion_Long_File.rtf

Personal Communication:

Professor Brian Kearney

Mr Ken Gillings

Mr.Dick O' Brien

Robin Archer (Huntsman Tioxide)

Mr Steve de Agrela (SANDF Documentation Centre)

Ms Ros Deveraux (Amafa aKwaZulu-Natali)

Ms Martie Smith (Curator AECl Museum)

Pictures sent to Major Anthony Gordon, Ricky Nortje and Captain Mac Bissett for assistance in identification.

An attempt was made to contact Dr Dominy to establish whether he had seen these structures at the time of his survey in 1995 but he was not contactable.